REMARKS

Further consideration of this application courteously is solicited.

Initially, the Examiner's grant of the interview on August 29, 2003 has been appreciated. Applicants' representatives, Mr. Sato and Mr. Akasaka, were very pleased to have the opportunity to meet with the Examiner and to discuss the merits of this case. Mr. Sato, Mr. Akasaka and the undersigned consider the interview to have been very productive.

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With reference to Paper No. 12, the interview is understood as having disposed of the issues raised in that Office Action. Specifically, claims 1, 2, 10, 12, 14-16, 19-22 and 25-28 were rejected in Paper No. 12 as purportedly obvious over Katsumata, et al., Wessels, et al., Harada and Mori. Claims 4, 6, 17, 24 and 29 were rejected as purportedly unpatentable over Katsumata, et al., Wessels, et al., Harada and Mori as applied to claims 1, 16 and 22, further in view of Sass. Claims 5, 7 and 18 were rejected as purportedly unpatentable over Katsumata, et al., Wessels, et al., Harada, Mori and Sass, further in view of Ijif, et al. Claims 8 and 9 were rejected over Katsumata, et al., Wessels, et al., Harada, Mori, further in view of Martin. Finally, claims 11 and 13 were rejected as allegedly unpatentable over Katsumata, et al., Wessels, et al., Harada, Mori and Peterson.

It was agreed during the interview that each of these several rejections has been overcome. This is because none of the asserted art teaches or suggests Applicants'

structure and Applicants' methods involving a ribbon-shaped conductor wrapped around the insulation layer at a wrapping angle of "45° or more." As the undersigned and Applicants' representatives explained during the interview, the wrapping angle, as recited in the independent claims, is the angle defined from the axial axis of the coaxial wire (the longitudinal axis of the center conductor) and the successive wraps of the outer conductor over top of the insulation layer. For the Examiner's convenience, Exhibit 1 is attached to this paper to show the wrapping angle θ' recited by Applicants in the independent claims.

Further to the recited wrapping angle, reference is made to the August 29, 2003 Interview Summary. There, the Examiner expressed agreement that U.S. Patent 4,638,114 (the Mori patent) discloses that the wrapping angle is measured from the horizontal axis (i.e, the radial axis) of the coaxial wire to the successive wraps of the outer conductor. Exhibit 2, also attached hereto, shows the angle θ discussed in Mori. Indeed, Exhibit 2 has been prepared from Figures 1 and 2 of Mori.

For the reasons stated above, it is courteously urged that all of the rejections stated in Paper No. 12 are overcome. Withdrawal of each of these rejections courteously is solicited.

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Next, during the interview, the recitation in independent claims 2, 16 and 22 of wrapping the ribbon-shaped conductor "under a tension of at least 30% of the tensile strength of said ribbon-shaped conductor" was discussed. The undersigned advised the

Examiner that this tension description likely would be deleted from at least some of these independent claims. This recitation now has been deleted from method claims 16 and 22. Because this tension parameter still is an important feature of the invention, description of the parameter is maintained in two new dependent claims, claims 31 and 32. Claim 31 depends directly from claim 16, while claim 32 depends from claim 22. Claims 31 and 32 are, of course, fully supported by original claims 16 and 22.

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New claim 33 also is added hereby. Claim 33 is broader than present independent apparatus claims 1 and 2. New claim 33 very generally introduces the center conductor and the conductive insulation layer. It focuses on the Applicants' novel and unobvious outer conductor. Like claims 1 and 2, claim 33 defines the outer conductor as of copper or copper alloy wire in a ribbon-shape with a virtually rectangular cross-section. This cross-section provides a "long" side. Claim 33 describes the ribbon-shaped conductor as helically wrapped around the insulation layer at Applicants' recited 45° or more wrapping angle, with respect to the (axial) axis of the coaxial element wire. In view of the wrapping angle recitation, Applicants courteously submit that new claim 33 likewise patentably distinguishes over the alleged prior art of record. The requisite government fee, resultant from addition of claim 33, is included in the check submitted herewith.

In view of the foregoing amendments and Remarks, it courteously is urged that all of the claims are allowable and that this application now is in condition for allowance. Favorable action in this regard earnestly is solicited.

Respectfully submitted,

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LISTING OF CLAIMS

1. (previously amended) A coaxial element wire, comprising:

a center conductor,

a non-electrically conductive insulation layer, provided around the center conductor, and in contact therewith having a thickness of 0.03mm or more and 0.15 mm or less at a portion of the insulation layer where the thickness is smallest; and

an outer conductor, made by pressing a copper or copper alloy round wire into a flat form, without annealing after pressing, to thereby provide a ribbon-shaped conductor of a virtually rectangular cross-section with its four corners smoothed, and then

helically wrapping said ribbon-shaped conductor around said insulation layer with one long side thereof facing said insulation layer,

wherein a wrapping angle of said ribbon-shaped conductor with respect to an axis of said coaxial element wire is 45 degrees or more.

2. (previously amended) A coaxial element wire, comprising:

a center conductor,

a non-electrically conductive insulation layer, disposed around said center conductor and in contact therewith, having a thickness of 0.03 mm or more and no greater than 0.15 mm at a portion of the insulation layer where the thickness is smallest, and

an outer conductor, made by:

pressing a copper or copper alloy round wire into a flat form, without annealing after pressing, to thereby provide a ribbon-shaped conductor of a virtually rectangular cross-section with its four corners smoothed, and then

helically wrapping said ribbon-shaped conductor, under a tension of at least 30% of the tensile strength of said ribbon-shaped conductor, around said insulation layer with one long side thereof facing said insulation layer, wherein a wrapping angle of said ribbon-shaped conductor with respect to an axis of said coaxial element wire is 45 degrees or more.

3. cancelled

4. (original) A multicore cable, comprising a plurality of said coaxial element wires according to claim 1 provided in a common outer jacket.

5. (original) The multicore cable according to claim 4, wherein outer conductors of the coaxial element wires are in contact.

6. (original) The multicore cable according to claim 4, wherein the plurality of coaxial element wires are twisted together and provided with a common jacket on the outside.

7. (original) An electronic apparatus including at least one multicore cable according to claim 5, disposed at a position where said multicore cable is subjected to mechanical rotation or bending.

8. (original) The coaxial wire element according to claim 1, wherein the outer, ribbon-shaped conductor is spirally wrapped such that adjacent wrappings of the outer conductor butt against one another.

9. (original) The coaxial wire element according to claim 2, wherein the outer conductor is helically wrapped such that adjacent wrappings of the outer conductor butt against one another.

10. (original) The coaxial wire element according to claim 1, wherein the ribbon-shaped conductor is spirally wrapped in a first direction, and wherein a second ribbon-shaped conductor is spirally wrapped in the first direction.

11. (original) The coaxial wire element according to claim 10, wherein the second ribbon-shaped conductor overlaps the first ribbon-shaped conductor.

12. (original) The coaxial wire element according to claim 2, wherein the first ribbon-shaped conductor is helically wrapped in a first direction and a second ribbon-shaped conductor is helically wrapped in the first direction.

13. (original) The coaxial wire element according to claim 12, wherein the second ribbon-shaped conductor overlaps the first ribbon-shaped conductor.

14. (previously amended) The coaxial wire element according to claim 1, wherein the outer conductor includes the first ribbon-shaped conductor spirally wrapped in a first direction and a second ribbon-shaped conductor spirally wrapped in a second direction opposite the first direction.

15. (original) The coaxial wire element according to claim 2, wherein the ribbon-shaped conductor is helically wrapped in a first direction, and a second ribbon-shaped conductor is helically wrapped in a second direction opposite the first direction.

16. (currently amended) A method of making a coaxial element wire, comprising:

providing a center conductor;

providing a non-electrically conductive insulation layer around the center conductor, wherein the insulation layer has a thickness of 0.15 mm or less;

providing an outer conductor formed by pressing a copper or copper alloy round wire into a flat form, without annealing after pressing, to thereby provide a ribbon-shaped conductor; and

spirally wrapping the ribbon-shaped conductor~~, under a tension of at least 30% of the tensile strength of the ribbon-shaped conductor,~~ around the insulation layer with one long side thereof facing said insulation layer, wherein a wrapping angle of said ribbon-shaped conductor with respect to an axis of said coaxial element wire is 45 degrees or more.

17. (original) The method according to claim 16, further comprising: assembling a plurality of the coaxial element wires in a common jacket to thereby form a multicore cable.

18. (original) The method according to claim 17, wherein outer conductors of the coaxial element wires are in contact.

19. (original) The method according to claim 16, wherein the spirally wrapping includes wrapping a second ribbon-shaped conductor around the insulation layer.

20. (original) The method according to claim 19, wherein the ribbon-shaped conductors are wrapped around the insulation layer in the same direction.

21. (original) The method according to claim 19, wherein the ribbon-shaped conductors are wrapped around the insulation layer in opposite directions.

22. (currently amended) A method of making a coaxial element wire, comprising:

providing a center conductor;

providing a non-electrically conductive insulation layer around the center conductor and in contact therewith, wherein a thickness of the insulation layer is 0.03 mm or more and not greater than 0.15 mm at a portion where the thickness is smallest;

providing an outer conductor formed by pressing a copper or copper alloy round wire into a flat form, without annealing after pressing, to thereby provide a ribbon-shaped conductor of a virtually rectangular cross-section with its four corners smoothed; and

helically wrapping one or a plurality of the ribbon-shaped conductors~~, under a tension of at least 30% of the tensile strength of the ribbon-shaped conductor,~~ around the insulation layer with one long side thereof facing the insulation layer, wherein a wrapping angle of the ribbon-shaped conductor with respect to an axis of the coaxial element wire is 45 degrees or more.

23. cancelled

24. (original) The method according to claim 22, further comprising: assembling a plurality of the coaxial element wires in a common jacket to thereby form a multicore cable.

25. (original) The method according to claim 22, wherein the helically wrapping includes wrapping a second ribbon-shaped conductor around the insulation layer.

26. (original) The method according to claim 25, wherein the ribbon-shaped conductors are wrapped around the insulation layer in the same direction.

27. (original) The method according to claim 25 wherein the ribbon-shaped conductors are wrapped around the insulation layer in opposite directions.

28. cancelled

29. (previously presented) The coaxial wire element according to claim 1, wherein a plurality of said coaxial wire elements are arranged in a common jacket to form a multicore cable.

30. (previously presented) The coaxial wire element according to claim 1, wherein said insulation layer is made of PFA.

31. (new) The method according to claim 16, wherein the ribbon-shaped conductor is spirally wrapped around the insulation layer under a tension of at least 30% of the tensile strength of the conductor.

32. (new) The method according to claim 22, wherein the ribbon-shaped conductor is spirally wrapped around the insulation layer under a tension of at least 30% of the tensile strength of the conductor.

33. (new) A coaxial element wire, comprising:

a center conductor,

a non-electrically conductive insulation layer provided around the center conductor and in contact therewith; and

an outer conductor helically wrapped around said insulation layer at a wrapping angle, with respect to the axial axis of said coaxial element wire, of 45 degrees or more with one long side of said outer conductor facing said insulation layer, said outer conductor being a copper or copper alloy wire having a ribbon shape with a virtually rectangular cross-section, and said one long side.